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1 RECORD OF ORAL HEARING
2 UNITED STATES PATENT AND TRADEMARK OFFICE

3
4 BEFORE THE BOARD OF PATENT APPEALS
5 AND INTERFERENCES

6
7 *Ex Parte* PETER B. EVANS and STEVEN E. SCHUMER

8
9 Appeal 2009-013225
10 Application 10/666,209
11 Technology Center 2100

12 Oral Hearing Held: April 14, 2010

13
14 Before JOSEPH L. DIXON, ST. JOHN COURTENAY, III, and
15 STEPHEN C. SIU, *Administrative Patent Judges*.

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1 THE USHER: Good morning. This is Calendar No. 24, Appeal No.
2 2009-013225, Mr. Brian G. Brannon for the Appellant.

3 JUDGE DIXON: Hello, Mr. Brannon.

4 MR. BRANNON: Good morning. How are you all doing this
5 morning?

6 JUDGE DIXON: All right. You have 20 minutes. You may begin
7 when you are ready.

8 MR. BRANNON: Yes. I'd like to thank you all for the time and
9 briefly introduce Mr. Peter Evans, who is in the room with me. He is one of
10 the named inventors in the application. What I'd like to do today is present
11 some additional arguments that supplement the previously presented
12 arguments, addressing the -- seeking the reversal of rejections of Claims 1
13 through 14, 19, and 20, which had previously been rejected under 35 102A -
14 - or 35 U.S.C., 102A. As anticipated by this reference, operation through the
15 year of June 14, 2000, PG & E bearing system events, using AEMPFAST
16 software which, for clarity, I'll refer to herein as the Optimal reference. So,
17 for a single reference to anticipate a claim, as required under 102A, that
18 reference needs to teach each and every element of the Claim, in as
19 complete a detail as recited in the Claim. The Optimal reference doesn't
20 meet this threshold.

21 In particular, each of the independent claims includes this element,
22 which I'll read for you, for clarity, which of "generating a single
23 mathematical model by generating the model of the transmission level buses
24 with the model of the distribution level buses wherein the single
25 mathematical model further models the interdependency of the plurality of
26 transmission lines and the plurality of transmission electrical elements

1 included at the model of the transmission level buses, and the plurality of
2 distribution lines and the plurality of distribution lines for elements included
3 in the model of the distribution level buses."

4 Now, that Claim element's kind of a mouthful, so I'm going to just
5 briefly paraphrase to try to make it, hopefully, a little more concrete. So,
6 what this element's doing is generating a single model that includes the
7 elements from the transmission system, the buses, and the components, in
8 addition to the elements from the distribution system -- the distribution buses
9 and the distribution elements. In addition to including all of those elements,
10 the model also models the interdependency between the two systems. This
11 provides some benefits that were not previously present in conventional
12 techniques at the time of the filing. In particular, this use of both
13 transmission and distribution level components in a single model allows for
14 greater granularity in determining how our system performance, as well as
15 determination of how modification to a distribution system affects the
16 transmission system, and vice versa. Generating this model involves two to
17 three orders of magnitude of additional data than what was conventionally
18 done, where distribution networks were modeled independently, with maybe
19 a gross approximation of the transmission system, and separate modeling of
20 the transmission system, where there was a gross approximation of the
21 distribution system. These techniques, as opposed to doing more data, like
22 claimed, rely on less data.

23 Now, the Optimal reference does not make any disclosure of model
24 generation, in general, as required by the Claim, or generation of a specific
25 type of model that integrates the transmission level buses, transmission level
26 components, and distribution level buses and distribution level components.

1 What the Optimal Reference discloses is this AEMPFAST software layer.
2 This is an analytical layer that works in conjunction with the model, and
3 actually receives as input a model that performs various techniques to
4 analyze the system based on the model.

5 I'd like to briefly pause, because this is a pretty significant distinction,
6 to see if there are any questions about that, if there is anything I can do
7 clarify that distinction.

8 JUDGE DIXON: I mean, the Optimal Reference, basically they have
9 a -- it seems that they have a combination of the two elements in there,
10 without the generating step?

11 MR. BRANNON: Well, it's unclear what they actually have because
12 the Optimal Reference discloses receiving this data file, and this data file,
13 according to documents provided by Cal-Iso, and describes a power system
14 network. How that network actually -- how that -- that model has various
15 components of buses and elements, as indicated, I believe -- let me get the
16 specific reference for Optimal, because Optimal provides the specific
17 number of elements on pages -- pages 19 and 20 give kind of a brief
18 overview of what was in this data file that was being analyzed. The actual
19 relationship of the data within that -- the actual relationship of the
20 components within that data file is never contemplated by Optimal, which is,
21 more or less, because this Optimal reference is a study of how the specific
22 AEMPFAST software works in various conditions. So, the AEMPFAST
23 software is designed to work with a wide range of models, such as
24 conventional models or any description of power network, and to provide
25 various information about the operation of that power network. The Claim
26 is directed to, essentially, a step before when AEMPFAST would be used,

1 when the actual model itself is being generated and the components that
2 comprise that model. Does that clarify it or did I dodge the question? I
3 apologize.

4 JUDGE DIXON: No, you didn't.

5 MR. BRANNON: So perhaps to the -- the Optimal technology's
6 reference could work in conjunction with the Claim model. That's not really
7 an issue. But the Optimal technology -- the Optimal reference is discussing
8 a step that's done after the generation of a model, such as being claimed.

9 Now, there are some specific sections of Optimal technology that
10 have been cited throughout prosecution as allegedly disclosing -- as being
11 applied to the specific elements claimed, and I'd like to briefly address those
12 sections, if I may. In particular, there's a subsection 4 of the Optimal
13 reference, which starts on page 16. That's been cited and interpreted as
14 disclosing this creation of a single mathematical model. However, as
15 described in this section, what's being disclosed is reformatting of the initial
16 data file for a specific format. It's converted from an EPC format to a CWF
17 format, which doesn't actually add or modify the contents of the file, but just
18 changes the format in which it's presented. There's an additional mention in
19 this which would be Subsection 4.2.2.2, on page 17, where it talks about
20 extracting a subset of this data file such as this WSCC system, which is
21 indicative -- which is a reference to the transmission network of the western
22 half of the U.S. So, there's no indication here that any part of the -- that
23 distribution elements are added to this model. It is essentially partitions out
24 a subset for subsequent interpretation. So, there's no disclosure, in this
25 particular section of the creation of any model, much less the single

26

1 mathematical model with the transmission distribution buses and elements,
2 as well as their interdependencies.

3 There is an additional section that's cited for -- does apply to this
4 integrating step, and that occurs on page 13, with Section 3, titled The
5 Introduction to AEMPFAST Performance Capabilities. Now, the content of
6 this section describes the analytical results of analyzing a data set with
7 AEMPFAST, and, there are specific types of analyses that are disclosed,
8 such as ordering the retirement of older units, ranking the addition of system
9 resources, or improving locations where devices could be located. Each of
10 these results is a result of an analysis of a model. The model is not defined
11 with any particularity, or even in AEMPFAST, much less the particularity
12 recited in the Claims. All these benefits result from analysis of a model.
13 The model, as I've indicated, is just not disclosed in Optimal for its
14 disclosure -- for -- with any level of specificity. Are there any questions
15 about those points, just to interject?

16 Now I'd like to briefly consider -- there were a couple of other
17 references cited in the latter stages of prosecution, this Business Wire and
18 Teresko Article. Now these were not actually applied to the Claims because
19 it's still a 102A rejection, but these were cited to more or less provide
20 support for the Examiner's interpretation of the reference. But these
21 references make no additional -- they don't contribute any additional
22 material that's not found in the text of Optimal. They essentially restate the
23 benefits of analysis using AEMPFAST, such as the speed with which the
24 data can be analyzed, the ability for real time analysis. All those analysis
25 features are beneficial, but they're not indicative of a model being used.
26 Essentially, that's analysis of a model. Whatever the model is, is undefined

1 in any of the references. And in contrast to this analysis, what we're
2 claiming is this generation of a specific type of model, the specific single
3 model that integrates transmission level buses, distribution level buses,
4 transmission level elements, distribution level elements, and the
5 interdependencies between each of those. Any clarification for those or --

6 JUDGE DIXON: No.

7 MR. BRANNON: Okay. So, at the core of the distinction here is that
8 this -- what the Optimal reference discloses is an analytical layer. The
9 analytical layer would be distinct from the model that we -- that is claimed
10 in the invention. This analytical layer may be used with the model, it could
11 be even used with the model being claimed, but it does not involve
12 generation of the model being used. Essentially, the AEMPFASST software
13 would function as a black box, or a transfer function, that receives an input
14 model and performs various types of analyses on this model and spits out a
15 result describing the operation of a power network described by that model.
16 There's no association -- the model itself is not modified or generated by
17 AEMPFASST. It's merely analyzed with respect to certain criteria, which
18 vary depending on implementation details.

19 JUDGE COURTENAY: As a matter of claim construction, what is
20 your -- the broadest, but reasonable, interpretation of distribution level
21 buses, as contrasted with transmission level buses, in your view.

22 MR. BRANNON: I'm sorry, I didn't hear the first part of the question.

23 JUDGE COURTENAY: As a matter of claim construction, you
24 know, we do the broadest, but reasonable, interpretation of your Claim terms
25 in light of your specification.

26 MR. BRANNON: Yes.

1 JUDGE COURTENAY: So, what is your view of the broadest, but
2 reasonable, interpretation of distribution level buses as contrasted with
3 transmission level buses --

4 MR. BRANNON: I would view the transmission level buses, as
5 described in the transmission of power, from a generation station to a step-
6 down substation or a distribution unit, and then the distribution buses as the
7 transmission from that step-down, or distribution station, to individual
8 consumers. So, it's almost a high voltage versus low voltage distinction,
9 with the transmission lines covering the -- the transmission buses covering
10 the high voltage distribution of the long haul, with the distribution covering
11 feeding from a specific substation to customers or users.

12 JUDGE COURTENAY: Okay. And that's supported by your
13 specifications?

14 MR. BRANNON: Yes. If you give me a minute, I can support it.
15 It's actually consistent with the conventional uses of the term in the art for
16 transmission distribution.

17 JUDGE COURTENAY: So, really, that's the ordinary and customary
18 meaning of those terms in the art?

19 MR. BRANNON: Yes, that's correct.

20 JUDGE COURTENAY: Okay. All right.

21 MR. BRANNON: There were no specific unique definitions brought
22 forth. And as the Brief mentioned, the conventional techniques -- because of
23 the sheer size of this unified data set, existing techniques at the time of filing
24 would use either the transmission distribution model for specificity and
25 incorporate a -- kind of a dumbed-down approximation of the other system.
26 And essentially, the transmission system would be modeled in detail with a

1 gross approximation of the distribution system, and the distribution system
2 is modeled in detail with a gross approximation of the transmission. Since
3 there is some relationship, it can't be determined with a level of granularity
4 or specificity as the component level provided by the Claim model.

5 JUDGE COUTENAY: Okay. So, your purported point of novelty is
6 really you're combining both of these models?

7 MR. BRANNON: Right. The combination of the models at this very
8 specific level of determining the relationship between the individual
9 components and the individual buses, as opposed to a global sense. It's more
10 of a degree of granularity.

11 And I believe, with that, I don't have any additional points to raise, but
12 I would be happy to answer any questions that you all may have to provide
13 any clarity. And just to stress -- I would like to just stress that, again, the
14 distinction here is so much that the Optimal reference is this analytical layer
15 that's independent of a model. It's dependent on a model that is received and
16 does not actually do any generation, and the reference -- and the Optimal
17 reference is silent as to whatever model is used. It just merely has this idea
18 of a data file. The contents of that data file and the relationships between the
19 components in that data file are not actually described with any level of
20 specificity in Optimal. It's just taken as a constant, whereas the Claims have
21 this very specific generation of a specific type of single mathematical model
22 that models distribution buses, distribution elements, transmission buses,
23 transmission elements, and the interdependencies between those
24 components. With that, I'd be happy to answer any other questions, but I
25 believe I've raised the issues I'd like to raise.

26 JUDGE DIXON: I have one question that I struggle with.

1 MR. BRANNON: All right. I'm scared already.

2 JUDGE DIXON: Yeah. It's In re Bilski. You talk about black box
3 and your Claims are all method, simulating -- you do throw field of use of
4 electric power networks, but it's all modeling, it's all numbers.

5 MR. BRANNON: Well, what's being modeled is actually --

6 JUDGE DIXON: And then at the end, you say outputting data
7 describing the network, but you never even say that it's done by a computer,
8 so it could be just number crunching.

9 MR. BRANNON: Okay. Well, I guess the one thing that --

10 JUDGE DIXON: You do have claims that say that it's on a medium
11 and it's done by a computer. Those, arguably, could be -- would be
12 statutory -- could be statutory. The other ones -- I didn't go through the
13 whole record, but, you know, it's a concern but it's not before the panel, and
14 I don't know if the panel would consider --

15 JUDGE COURTENAY: Well, since you have raised that issue, could
16 you explain how Claim 1 is tied to a machine or one of the other statutory
17 subject classes?

18 MR. BRANNON: Well, as a threshold issue, I'd like to just point out
19 that, as written, there's not a specific recitation of tying each element to a
20 specific machine or apparatus. But what the Claims are seeking to simulate
21 and what they actually are simulating is the Model as an actual
22 representation of a real word power network. So, I would make an
23 analogous -- I would make this situation analogous to that of modeling a CT
24 scanner x-ray data to determine -- so what's being manipulated is actually a
25 representation of a real physical quantity as opposed to an abstract idea.

26

1 That would the -- as the claims are written, that would be my best analogue
2 for it. Tying anything to a statutory basis --

3 JUDGE DIXON: But there, with the x-ray, they're getting x-ray data
4 that they're using. Here, are you taking -- just chucking numbers through,
5 random numbers that you're pulling, or is it taking --

6 MR. BRANNON: No. The data being simulated is actually tied to
7 the real components in the power network being simulated. So, it's actually
8 pulled from real in-the-field, work. It's not just an abstract idea. That would
9 be the best way I could have to resolve that with the Claims, as written.

10 JUDGE DIXON: Thank you.

11 MR. BRANNON: No problem. Were there any other points, because
12 I --

13 JUDGE DIXON: Nope. That's it.

14 MR. BRANNON: I believe I've made my points, and I appreciate --
15 I really want to thank you all for your time and I appreciate the willingness
16 to listen.

17 JUDGE DIXON: Okay. Thank you.

18 No questions?

19 Thank you for your time.

20 JUDGE COURTENAY: Thank you very much.

21 MR. BRANNON: Thank you very much. Appreciate it.

22 Whereupon, the proceedings, at 9:21 a.m., were concluded.

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